

REMARKS

Claims 5-9, 13-17, and 20-34 are pending in the application.

Claims 5-9, 13-17, and 20-34 stand rejected.

Claims 7-9, 20, 22-23, 27-28, and 32-33 have been amended.

Rejection of Claims under 35 U.S.C.

Claim 20 was objected to due to the use of the phrase “to a one of”. This claim has been amended, for clarification purposes only, to recite “to one of”. Applicants note that the scope of the claim has not been narrowed by this amendment.

Rejection of Claims under 35 U.S.C. §112

Claims 7-9, 22-23, 27-28, and 32-33 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Applicants have amended claims 7-9, 22-23, 27-28, and 32-33 to provide correct antecedent basis. Applicants note that these amendments are made for clarification purposes only and that the scope of the claims has not been narrowed by these amendments.

Rejection of Claims under 35 U.S.C. §102(e)

Claims 5, 13, 20, 25, and 30 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Madonna, U.S. Patent No. 6,002,683 (hereinafter referred to as “Madonna”). Applicants respectfully traverse this rejection.

Claim 5 recites, in pertinent part, receiving frames from a plurality of ring networks at a single network element, and detecting a failure in one of said plurality of ring networks, wherein said detecting said failure comprises reading a portion of a frame.

Madonna describes a scenario in which “node 6f has failed or a portion of inter-nodal network 12 has failed (or possibly a malfunction was detected and the node was taken out of service by the host 4). The nodes 6e and 6g which are adjacent to the failed node 6f begin to

operate in 'loopback' mode. In loopback mode, the circuitry within a node which is normally used to receive information from one ring is connected to the circuitry which is normally used to transmit information on the other ring... A particular node may be instructed by the host 4 to operate in loopback mode or, alternatively, operation may begin automatically in response to expiration of a 'watchdog' timer." Madonna, col. 21, lines 22-37. Nowhere in the cited portion of Madonna is it taught or suggested that a node "detect[s] a failure in one of said plurality of ring networks, wherein said detecting said failure comprises reading a portion of a frame." Instead, Madonna teaches that a node can begin operating in loopback mode in response to being instructed to do so by the host or in response to expiration of a timer. Thus, the reference clearly fails to anticipate, teach, or suggest claim 5. Claims 13, 20, 25, and 30 are patentable over the cited art for similar reasons. Accordingly, Applicants respectfully request the withdrawal of this rejection.

Rejection of Claims under 35 U.S.C. §103

Claims 6-8, 21-23, 26-28, and 31-33 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Madonna, in view of Wu, U.S. Patent No. 5,442,623 (hereinafter referred to as "Wu"). Applicants respectfully traverse this rejection. Applicants assert that these claims are patentable for at least the foregoing reasons provided above with respect to claim 1.

Applicants also note that there is no suggestion to combine Madonna with Wu. While Madonna states that "inter-nodal network 12 may also be implemented with any other of a variety of other types of communications networks, including... PSTN (ATM/SONET)" (Madonna, col. 6, lines 52-55), Madonna provides no motivation to incorporate the particular features of Wu that are referenced in the rejections. Furthermore, Wu also fails to provide such a motivation. On page 9 of the Office Action, the Examiner cites column 4, lines 9-11 of Wu as providing the motivation to combine: "The self healing ring networks may automatically detect a failure and execute a protection switching scheme." However, this does not suggest that such a scheme would be desirable or even workable in the system taught in Madonna. Furthermore, as noted above, Madonna already addresses the problem of initiating loopback by using a host or timer to instruct a node to begin operating in loopback mode.

Applicants also note that the technique used to initiate loopback in Madonna is much different than the technique taught in Wu. In Wu, "A node, which is adjacent to, and which

detects a failure of, request [sic] protection switching at another node adjacent to the failure by transmitting the K1 and K2 bytes to the other node”. Wu, col. 4, lines 20-23. In contrast, in Madonna, loopback is initiated by a host or timer. Clearly, Madonna and Wu each provide a very different solution to the problem of how to initiate loopback, and thus does not seem likely that one of ordinary skill in the art would have been motivated to combine the teachings of Madonna and Wu.

Claims 9, 14, 15, 16, and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Madonna, in view of Nathan, U.S. Patent No. 6,295,146 (hereinafter referred to as “Nathan”). Applicants respectfully traverse this rejection. Applicants assert that these claims are patentable for at least the foregoing reasons provided above with respect to claim 5.

Additionally, there is no motivation to combine Nathan and Madonna. Nathan and Wu each use a different solution when addressing the problem of recovering from failures in a ring network. Nathan allow two rings to use the same spare channel that exists between Nathan’s OCCSs, such that the OCCSs are used to couple the ADMs which originate the alarm, to the spare channel. Nathan, Abstract. In contrast, Madonna teaches that “use of two rings provides fault isolation for the system 17. That is, should one ring fail (which would render the entire, single ring system 2 inoperable), the second ring may continue to transfer information between nodes, thereby keeping the system 17 at least partially operational. Madonna, col. 7, lines 43-47. In the case of Nathan, rings share access to a spare channel, thereby providing each with protection against failure in a given span (in either ring), while reducing the number of spare optical links that must be maintained. The completely redundant approach taken by Madonna is not consistent with the shared approach taken by Nathan. Applicants therefore respectfully submit that one of skill in the art, at the time of invention, would not have been motivated to combine Nathan and Madonna because of their dissimilar approaches.

Claims 24, 29, and 34 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Madonna, in view of Wu, and further in view of Nathan. Applicants respectfully traverse this rejection. Applicants assert that these claims are patentable for at least the foregoing reasons provided above with respect to claim 5.

As noted above and in the previous response, there is no motivation to combine Nathan with Wu and Madonna. As noted above, there is no motivation to combine Nathan and Madonna. Additionally, as pointed out in the previous response, Nathan and Wu each provide a different solution to the problem of recovering from failures in a ring network. Nathan allow two rings to use the same spare channel that exists between Nathan's OCCSs, such that the OCCSs are used to couple the ADMs which originate the alarm, to the spare channel. (Nathan, Abstract) In contrast, Wu uses a protection ring, in which a failure is bypassed via the conveyance of traffic between nodes on either side of the failure over a redundant ring (the protection ring). (Wu, Summary) In the case of Nathan, rings share access to a spare channel, thereby providing each with protection against failure in a given span (in either ring), while reducing the number of spare optical links that must be maintained. In the case of Wu, an entire redundant ring (a protection ring) is provided, in order to permit the bypassing of failures. Wu's protection ring provides fault tolerance at the expense of having a completely redundant ring. Thus, the completely redundant approach taken by Wu is at odds with the shared approach taken by Nathan. Applicants therefore respectfully submit that one of skill in the art, at the time of invention, would not have been motivated to combine Nathan and Wu because their approaches to the problem of failures are contrary to one another. For similar reasons, a person of ordinary skill in the art would also not have been motivated to combine Nathan and Madonna, which also teaches the use of two redundant rings to provide fault isolation (e.g., see Madonna, col. 7, lines 43-47).

CONCLUSION

In view of the amendments and remarks set forth herein, the application is believed to be in condition for allowance and a notice to that effect is solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the Examiner is invited to telephone the undersigned at 512-439-5087.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on June 22, 2004.

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Date of Signature

Respectfully submitted,

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